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Civil Reserve Air Fleet (CRAF)

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Civil Reserve Air Fleet (CRAF)

Summary

The Civil Reserve Air Fleet (CRAF) supports Department of Defense (DOD) airlift requirements in emergencies when the need for airlift exceeds the capability of the military aircraft fleet. All CRAF participants must be U.S. carriers fully certified by the Federal Aviation Administration, and meet the stringent standards of Federal Aviation Regulations pertaining to commercial airlines (Part 121).

The CRAF has three main segments: international, national, and aeromedical evacuation. The international segment is further divided into the long-range and short-range sections and the national segment into the domestic and Alaskan sections. Assignment of aircraft to a segment depends on the nature of the requirement and the performance characteristics needed.

The commercial airlines contractually pledge aircraft to the various segments of CRAF, ready for activation when needed. To provide incentives for civil carriers to commit aircraft to the CRAF program and to assure the United States of adequate airlift reserves, the government makes peacetime airlift business available to civilian airlines that obligate aircraft to the CRAF. DOD offers business through the International Airlift Services.

CRAF presents benefits and opportunities for both DOD and U.S. airlines. By all accounts it appears to be a symbiotic relationship. Yet, as circumstances change, pressures and diverging interests may emerge that could bring changes to CRAF. A number of factors may be considered when examining the future size, character and role of CRAF. These factors include cost, other potential government / commercial arrangements, potential change in DOD requirement for CRAF, and industrial base or financial assistance to U.S. air carriers. This report will be updated as events warrant.

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Civil Reserve Air Fleet (CRAF)

Background

The Civil Reserve Air Fleet (CRAF) supports Department of Defense (DOD) airlift requirements in emergencies when the need for airlift exceeds the capability of military aircraft. All CRAF participants must be U.S. carriers fully certified by the Federal Aviation Administration (FAA), and meet the stringent standards of Federal Aviation Regulations pertaining to commercial airlines (Part 121). To join CRAF, a carrier must commit at least 30% of its CRAF-capable passenger fleet, and 15% of its CRAF-capable cargo fleet. Aircraft committed must be U.S. registered and carriers must also commit and maintain at least four complete crews for each aircraft.

Air Mobility Command (AMC) analysts implement a number of surveillance initiatives to monitor the carrier's safety record, operations and maintenance status, contract performance, financial condition and management initiatives, summarizing significant trends in a comprehensive review every six months. These initiatives are supplemented by an open flow of information on all contract carriers between AMC and the FAA through established liaison officers.

CRAF Structure

The CRAF has three main segments: international, national, and aeromedical evacuation. The international segment is further divided into the long-range and short-range sections and the national segment into the domestic and Alaskan sections. Assignment of aircraft to a segment depends on the nature of the requirement and the performance characteristics needed.

The long-range international section consists of passenger and cargo aircraft capable of transoceanic operations. The role of these aircraft is to augment C-5s and C-17s during periods of increased airlift needs. Medium-sized passenger and cargo aircraft make up the short-range international section supporting near offshore airlift requirements.

The aircraft in the Alaskan section provide airlift within U.S. Pacific Command's area of responsibility, specific to Alaska needs. The domestic section is designed to satisfy increased DOD airlift requirements in the United States during an emergency.

The aeromedical evacuation segment assists in the evacuation of casualties from operational theaters to hospitals in the continental United States. These aircraft are also used to return medical supplies and medical crews to the theater of operations. Kits containing litter stanchions, litters, and other aeromedical equipment are used to convert civil B-767 passenger aircraft into air ambulances.

Contractual Relationship

The airlines contractually pledge aircraft to the various segments of CRAF, ready for activation when needed. To provide incentives for civil carriers to commit aircraft to the CRAF program and to assure the United States of adequate airlift reserves, the government makes peacetime airlift business available to civilian airlines that obligate aircraft to the CRAF. DOD offers business through the International Airlift Services.

For FY2005, the guaranteed portion of the CRAF contract was \$418 million. AMC estimates that throughout fiscal 2005 it would also award more than \$1.5 billion in additional business that is not guaranteed.¹ In September 2005 the Air Force announced \$2.2 billion in CRAF contracts had been let FY2005.² For FY2003 the guaranteed portion of the CRAF contract was \$394 million with more than \$224 million in potential, additional business. DOD let contracts worth \$3.8 billion to commercial airlines to transport personnel and cargo from FY1998 to FY2002;³ 1998 — \$646 million, 1999 — \$710 million, 2000 — \$629 million, 2001 — \$572 million, and 2002 — \$1,280 million. The use of chartered commercial aircraft in 2002 was more than double that of the previous year. This may be due to an unanticipated increase in mobility requirements in support of the Bush Administration's war on terrorism.

Activation

Three stages of incremental activation allow for tailoring an airlift force suitable for the contingency at hand. Stage I is for minor regional crises, Stage II would be used for major theater war, and Stage III for periods of national mobilization.

The commander, U.S. Transportation Command (TRANSCOM), with approval of the Secretary of Defense, is the activation authority for all three stages of CRAF. During a crisis, if the Air Force Air Mobility Command (AMC) has a need for additional aircraft, it would request the TRANSCOM commander to take steps to activate the appropriate CRAF stage.

Each stage of the CRAF activation is only used to the extent necessary to provide the amount of civil augmentation airlift needed by DOD. When notified of call-up, the carrier response time to have its aircraft ready for a CRAF mission is 24 to 48 hours after the mission is assigned by AMC. The air carriers continue to operate and maintain the aircraft with their resources; however, AMC controls the aircraft missions.

¹ *Civil Reserve Air Fleet* (Fact Sheet). U.S. Air Force. October 2005. [<http://www.af.mil/factsheets/factsheet.asp?id=173>]

² "Air Force announces CRAF contracts valued at \$2.2 billion." (Release Number: 570905) *Air Force Print News Today*. Sept. 13, 2005.

³ *Military Readiness. Civil Reserve Air Fleet Can Respond as Planned, but Incentives May Need Revamping*. General Accounting Office (GAO-03-278) December 2002. p.15.

CRAF has been formally activated on two separate occasions over the program's 54 year history. The first activation was during Operations Desert Shield/Storm from August 18, 1990 through May 24, 1991. The level of activation included long range international passenger and cargo up to Stage II. The second activation was during Operation Iraqi Freedom from February 8, 2003 through June 18, 2003. The level of activation included long range international passenger up to Stage 1; long range cargo was not required.

CRAF Membership

As of April 2005, 40 carriers and 1,126 aircraft were enrolled in the CRAF. This includes 1,003 aircraft in the international segment (785 in the long-range international section and 218 in the short-range international section), and 36 and 83 aircraft, respectively, in the national and aeromedical evacuation segments. These numbers are subject to change on a quarterly basis. The following air carriers are members of the Civil Reserve Air Fleet:

Long-Range International Section:

ABX Air
Air Transport International
American Airlines
ATA Airlines
Arrow Air
Astar Air Cargo
Atlas Air
Continental Airlines
Delta Air Lines
Evergreen International
FEDEX Express Airlines
Gemini Air Cargo
Hawaiian Airlines
Kalitta Air
North American Airlines
Northwest Airlines
Omni International
Polar Air Cargo
Ryan International
Southern Air
United Airlines
United Parcel Service Airlines
US Airways
World Airways

Express.net
Falcon Air
Lynden Air Cargo
Miami Air International
Planet Airways
Spirit Airlines
Sun Country

Aeromedical Evacuation Segment:

Delta Air Lines
United Airlines
US Airways

Domestic Section:

Air Trans Airways
America West
Frontier Airlines
Midwest Airlines
Southwest Airlines

Alaskan Section:

Northern Air Cargo
Lynden Air Cargo

Short-Range International Section:

Alaska Airlines
Astar Air Cargo
Champion
Continental Airlines
Delta Airlines
Evergreen International

Analysis - Potential Future of CRAF

CRAF presents benefits and opportunities for both DOD and U.S. airlines. By all accounts it appears to be a symbiotic relationship. Yet, as circumstances change, pressures and diverging interests may emerge that could bring changes to CRAF. For example, DOD plans appear to increasingly emphasize expeditionary warfare and long-range power projection. Increasing the size, capacity, and use of CRAF is one potential approach to satisfying DOD's growing appetite for long range airlift.⁴ Also, the Department of Transportation has proposed changes to Federal Aviation Administration (FAA) regulations that might potentially lead to increased foreign investment in U.S. airlines, including those that participate in CRAF.⁵ In light of these factors, an examination of the potential future of CRAF appears useful.

Cost Factors

The primary benefit that CRAF imparts is low cost. The Government Accountability Office (GAO) notes that CRAF provides up to half of the nation's long range airlift capability without the government having to buy additional aircraft, pay personnel costs, or maintain the aircraft during peacetime. GAO references the use of CRAF during *Operation Desert Storm* to illustrate its point:

The use of CRAF aircraft during an activation is not free — DOD pays rates based on weighted average carrier costs — but the cost is minimal in comparison to the costs of acquiring and supporting aircraft, paying and training aircrew, and other expenses of maintaining standby military airlift capability. AMC paid the carriers about \$1.5 billion for using their aircraft during the operation. Purchasing additional military aircraft to provide similar capability would cost from \$15 to \$50 billion, according to Air Force officials, depending on assumptions used for aircraft replacement cost.⁶

A RAND study (*Finding the Right Mix of Military and Civil Airlift, Issues and Implications*) also includes a discussion of the cost-effectiveness of CRAF:

For a very small cost, the DOD has had on call a very substantial airlift capacity. Replacing CRAF's 1992 Stage II capability with military-style transports would have cost the DOD about \$1 billion annually (1992 dollars) over the past several decades. Replacing the Stage III capability would have cost about \$3 billion annually.⁷

⁴ See CRS Report RS20915, *Strategic Airlift Modernization*, by Christopher Bolkcom for more information.

⁵ See 70 Fed. Reg. 67,389 (Nov. 7, 2005), a Notice of Proposed Rulemaking (NPRM) seeking comments on a proposal to clarify the policy of requiring "actual control" of a U.S. air carrier to be by a citizen of the United States.

⁶ *Ibid.*, p.7.

⁷ Jean Gebman, et al. *Finding the Right Mix of Military and Civil Airlift, Issues and Implications*. Volume 1. Executive Summary. RAND. Santa Monica, CA.1994. P.21.

The RAND analysis points out that to have adequate airlift for a major crisis, DOD maintains a military airlift fleet with a total capacity four to five times greater than the average daily use. Costs associated with acquiring and maintaining this excess airlift capability must be routinely incurred, even if the full capacity is rarely used.

As DOD's procurement and operations and maintenance accounts come under increasing pressure, it may appear attractive to increase the size of CRAF in lieu of procuring and operating a certain fraction of the Air Force strategic airlift fleet. Recent events may suggest that a growing use of commercial aircraft for every-day DOD needs is already in evidence. In January 2005, for example, it was reported that commercial airlines moved twice as many U.S. troops overseas as they moved in January 2004.⁸

Contracting with air carriers to commit their aircraft to wartime needs is cheaper, in a sense, than purchasing and operating additional Air Force cargo aircraft. However, CRAF is not free, and it costs more once activated. RAND points out that:

Although holding reserve capacity in the CRAF is far more cost effective than holding the reserve in the military airlift fleet, the government has a financial incentive to use its own resources (for which it has already committed funds) in a crisis to the extent that they are conveniently available, rather than give additional business to CRAF carriers.⁹

Other Government / Commercial Arrangements

CRAF is not the only means by which DOD transports troops by civil aircraft. Through the General Services Administration (GSA), the U.S. government negotiates and lets contracts to commercial airlines to fly government employees on official U.S. government business. Federal employees, including DOD civilian and military personnel, traveling on government business are obliged to fly with these contracted airlines at the official government rate. DOD also charters commercial aircraft to satisfy peacetime mobility needs.

In July 2006 the U.S. Central Command had initiated a pilot program — “Commercial and Government Air Program” — to enlist commercial air cargo carriers to deliver military supplies into Afghanistan and Iraq. The pilot program is hoped to deliver up to 20% of DOD cargo to the region and to save DOD approximately \$9 million per month.¹⁰ DOD hopes to dramatically reduce its flight costs by creating competition among carriers for the work, and by leveraging excess cargo capacity on regularly scheduled commercial flights. This trial program could be viewed as something of an alternative to CRAF, or an indication that more CRAF would be welcome.

⁸ Micheline Maynard. “Airlines Moving More Troops This Month.” *New York Times*. Jan. 25, 2005.

⁹ RAND op cit. p.22.

¹⁰ Jason Sherman. “CENTCOM Taps Commercial Air Carriers to Cut Iraq Cargo Costs.” *Inside the Air Force*. July 21, 2006.

Potential Change in DOD Requirement for CRAF

It appears that the increased scope and pace of military operations following the terrorist attacks of September 11, 2001 have increased the Air Force's mobility needs and made CRAF a more prominent component of this capability.¹¹ This increased role, along with fear of bankruptcy or other major fluctuations in the U.S. commercial air carrier market has led DOD to seek access to foreign air carriers.¹² DOD's most recent mobility requirements study (Mobility Requirements Study 05, or MRS-05), however, calls for the same level of CRAF contribution to total airlift capabilities (20.5 million ton miles per day of the overall 54.5 million ton miles per day objective).¹³ DOD projected a growing discrepancy, however, between its actual and desired airlift capabilities.

The Air Force would prefer to increase its airlift capabilities with additional purchases of C-17 *Globemasters* because of that aircraft's unique capabilities in terms of range, types of payload that can be carried, and the ability to land on very austere runways.¹⁴ Because Air Force budget limitations make additional large-scale procurement of C-17s appear unlikely, DOD also proposes the design of a commercial version of the aircraft (the BC-17) that might become part of the CRAF fleet.

Some industry studies suggest that a commercial market for up to 10 commercial BC-17s may exist, for use in heavy industry, mining, or similar endeavors. Under the proposed Commercial Application of Military Airlift Aircraft (CAMAA), private companies would purchase BC-17s and make them available to the military in an emergency. The Air Force has proposed several options to encourage participation, such as helping companies find customers who need outsized cargo delivery, and monthly military business paid for at commercial rates. In addition to having access to these aircraft, it has been asserted, the Air Force and industry would benefit because building BC-17s for industry would use up excess production capacity and help lower the per-unit cost of those aircraft bought by DOD.¹⁵

¹¹ See for example, Cynthia Di Pasquale. "Pentagon Studies CRAF Sustainability and Incentives to Industry." *Inside the Air Force*. Oct. 8, 2004.

¹² See for example, Cynthia Di Pasquale. "Airline Bankruptcies, Move to Smaller Planes Concern AMC Officials." *Inside the Air Force*. Oct. 1, 2004.

¹³ Unlike previous mobility studies, DOD's 2006 *Mobility Capabilities Study* (MCS) did not provide a specific quantitative estimate of airlift requirements. Some have asserted that this omission reduces the value of the MCS and have called for another, requirements-driven study.

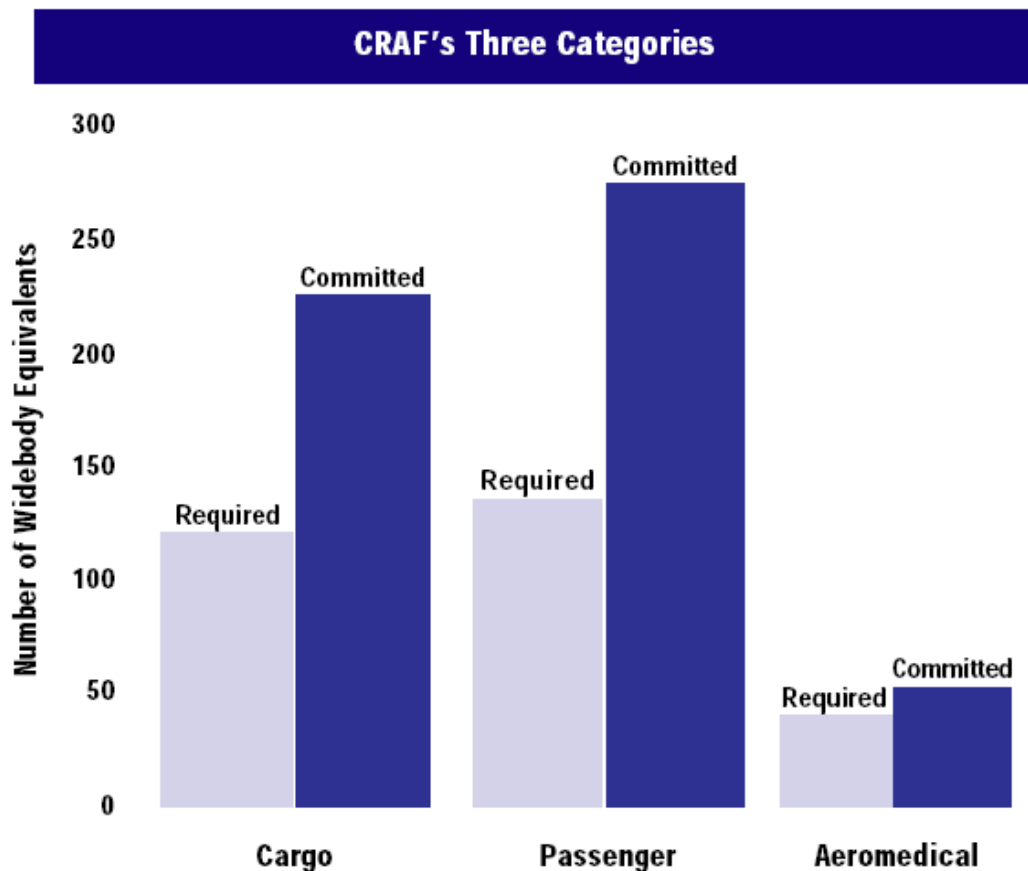
¹⁴ See CRS Report RL30685, *Military Airlift: C-17 Aircraft Program*, by Christopher Bolkcom for more information about the C-17.

¹⁵ Amy Butler. "Commercial C-17 Buys Would Stabilize Cost, Enhance Reserve Air Fleet." *Inside the Air Force*. December 22, 2000. Christian Lowe. "Air Force Issues Draft Solicitation for Civilian C-17s" *Defense Week*. July 9, 2001.

The figure above also indicates that DOD's projected use of CRAF to fulfill total airlift needs has increased from roughly 12 million ton miles per day (MTM/D) in the late 1980s to roughly 20 MTM/D today. However, this increase in capacity has occurred gradually, and the DOD's requirement for CRAF can be viewed as being stable over this 19 year span.

Another factor suggests that DOD's need for CRAF may not change, even if airlift requirements change. As the figure below indicates, commercial aircraft committed to CRAF exceed DOD requirements. Thus, any foreseeable increase in requirement appears likely not to cause any additional commitment in commercial aircraft.

Figure 1. CRAF Requirements and Commitments



Currently, the Air Force has more commercial aircraft committed to its Civil Reserve Air Fleet than it needs to meet wartime demand, but the number required could be going up just as some carriers are considering leaving the CRAF program. Due out by 2004 is a new mobility requirements study that may call for increased CRAF use for cargo, passengers, and medical evacuation.

Source: Air Force Magazine, February 2003. p.28.

Recapitalization of the Air Force's strategic aerial refueling fleet may also have an impact on future DOD CRAF needs and use. This is because both the KC-135 and the KC-10 are dual mission aircraft and carry cargo (primarily pallets) as well as fuel. Currently, DOD is most in need of the cargo portion of the CRAF fleet. If DOD were to recapitalize its aging tanker fleet with a larger number of KC-10-size aircraft (it is considering both large tankers like the KC-30 and medium tankers like the KC-767), it could appreciably increase the amount of organic cargo capability, and thus require less CRAF. Today, the 59 KC-10s in the Air Force inventory represent 12% of the Air Force's organic airlift capabilities. A purchase, for example, of 50 KC-30s, or similar aircraft, in tandem with the existing KC-10 fleet might take an appreciable bite out of DOD's CRAF needs.

Industrial Base / Financial Assistance to Air Carriers

Following the terrorist attacks of September 11, 2001, many U.S. commercial air carriers have struggled due to a lack of business and other factors. As economic and financial conditions for commercial air carriers have worsened, the potential benefit of CRAF for the commercial sector has been increasingly discussed. It may be that if economic conditions remain difficult, or worsen again, pressure may build on DOD to use more CRAF, not necessarily to satisfy DOD's needs, but to support the private sector.¹⁶

Table 1. Recent Growth in CRAF Participation

	1998	2002	2005
Carriers	35	33	40
Aircraft	657	927	1,126

Source: DOD data

All major passenger and cargo carriers participate in CRAF.¹⁷ This strong participation can be inferred to reflect broad support for CRAF. The program is voluntary, and it appears logical that if the airlines didn't find participation to be in their interest, they would not participate. Every indication suggests that U.S. air carriers value CRAF and want to participate. Many airline complaints about CRAF tend to address perceived impediments to increased access to the program and DOD's regular cargo business. A number of airline complaints or proposed modifications are summarized below. As an alternative to increasing the participation in, and use of CRAF, policy makers could, for example, aid commercial air carriers by addressing some of the following complaints:

¹⁶ See for example Scott McCartney. "Flying Troops for the Pentagon Gives Airlines a Financial Boost." *Wall Street Journal*. May 14, 2003. Micheline Maynard. "Pentagon's War Needs Are a Lifeline for Airlines." *New York Times*. Dec. 26, 2003. Micheline Maynard. "Pentagon's Needs Offer Airlines a Lift." *New York Times*. Jan. 22, 2005.

¹⁷ United, American, Delta, Northwest, US Airways, Southwest, UPS, and FEDEX respectively.

- Many carriers are dissatisfied with their share of peacetime business with DOD. They claim that DOD's preference for 747 aircraft, over smaller aircraft, unfairly rewards carriers that operate wide-body aircraft with a disproportionate amount of peacetime business. As a result, they argue that CRAF's reward system should be revamped.
- Some carriers have expressed an interest in more DOD business, but there are no incentives in CRAF to pursue it. One solution might be to allow carriers to bid for additional DOD contracts to transport small packages if these carriers commit more than the minimum number of aircraft required for the CRAF program.
- CRAF carriers must rely on supplemental insurance when operating in war zones. The FAA's Aviation War Risk Insurance Program is designed to provide CRAF carriers with wartime insurance, but it is seen as underfunded, and the bureaucratic procedures are unwieldy. The program could be streamlined and provided with additional funds.
- Commercial carriers can lose business to foreign competition or non-CRAF competitors when CRAF is activated. Although access to DOD business during peacetime makes up for this loss, some companies believe they should be compensated for lost business.
- Many of the airlines that operated during *Operation Desert Storm* said that DOD's compensation rates did not cover all the costs that they incurred. The Air Force pays airlines normal peacetime rates when they are activated. Airlines claim that costs for hazardous duty pay, routing delays and establishing en route bases were higher during activation than during peacetime. Airlines have filed claims with the Air Force for these costs, but complain that these claims took too long to settle and required onerous documentation.
- Some airlines complained that when they were activated to participate in *Operation Desert Storm* DOD did not fully use their aircraft. If the aircraft weren't used, the airline couldn't charge the government. Further, airlines complained about perceived delays in loading and unloading cargo when the aircraft were being used, which reduced the number of sorties they could fly, which in turn reduced the amount of money they could charge the government.
- The Air Force's greatest CRAF need is for cargo aircraft. Thus, DOD provides greater rights to peacetime business to airlines that commit cargo aircraft to the program. As a result, a small number of cargo carriers have the rights to a large portion of DOD's peacetime business. DOD's peacetime needs, however, are primarily for passenger aircraft. To address this imbalance of needs and interests, the airline industry developed a system of "joint ventures" where cargo and passenger carriers team up. Cargo carriers sell their rights to peacetime business to their passenger carrying partners. These

joint ventures work well in peacetime, but can become cumbersome when trying to settle extraordinary expense claims for CRAF activation and operations.